

The Use of Ion Vapor Deposited (IVD) Aluminum for the Space Shuttle Solid Rocket Booster

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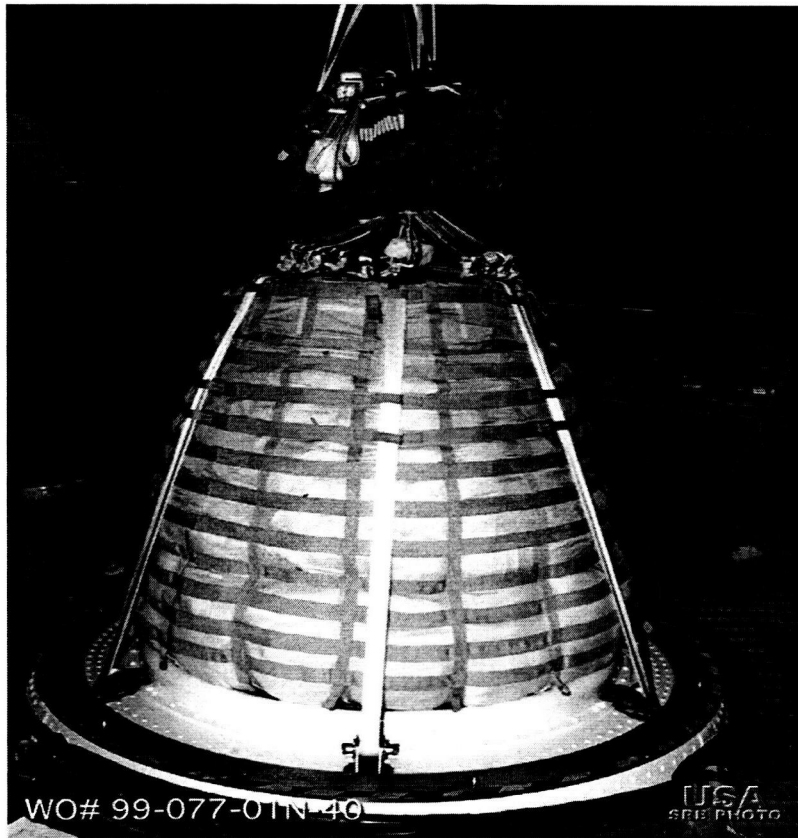
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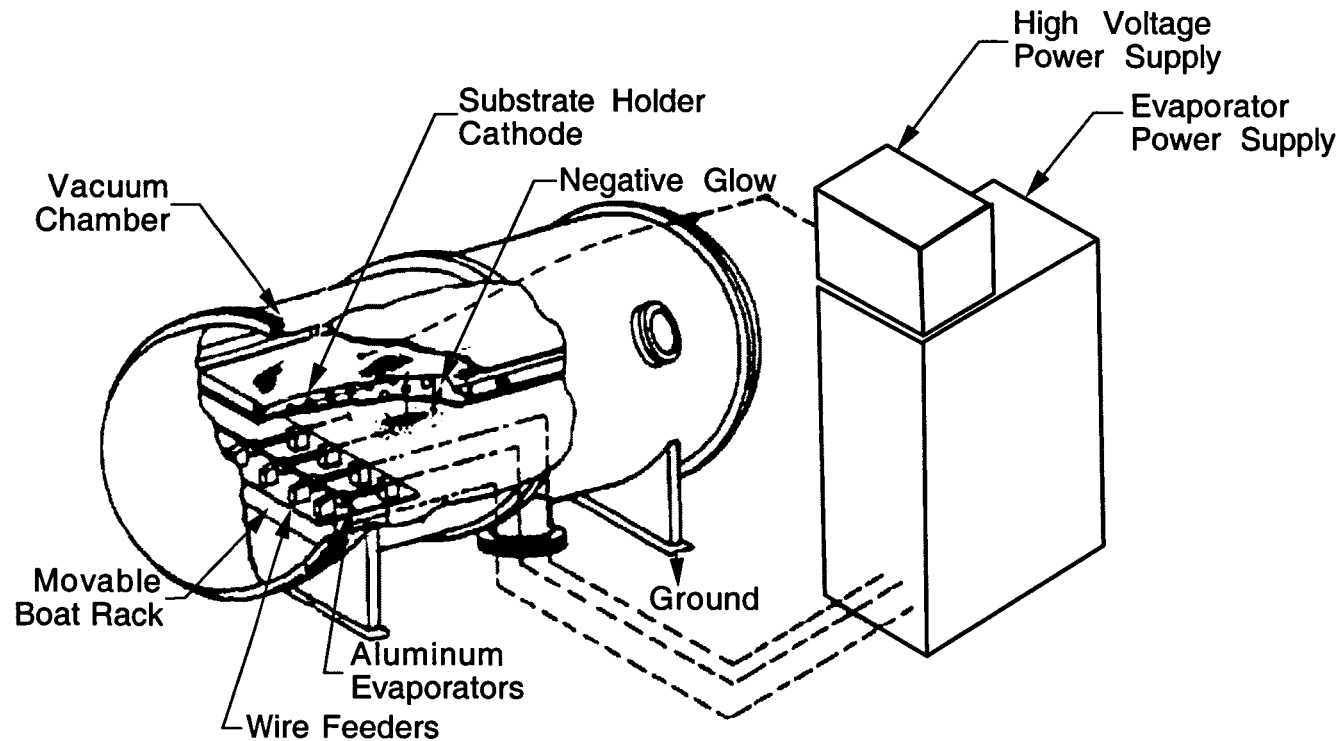
- Agenda
- Background
- Objectives
- Recommendations

The Use of Ion Vapor Deposited (IVD) Aluminum for the Space Shuttle Solid Rocket Booster

- **Background**
- **IR&D Development of IVD Aluminum**
- **GSE Lifting Hardware Coated with IVD**
- **MSFC Approval for IVD Drogue Ratchet**
- **USA M&P Proposal to IVD Other Flight Items**

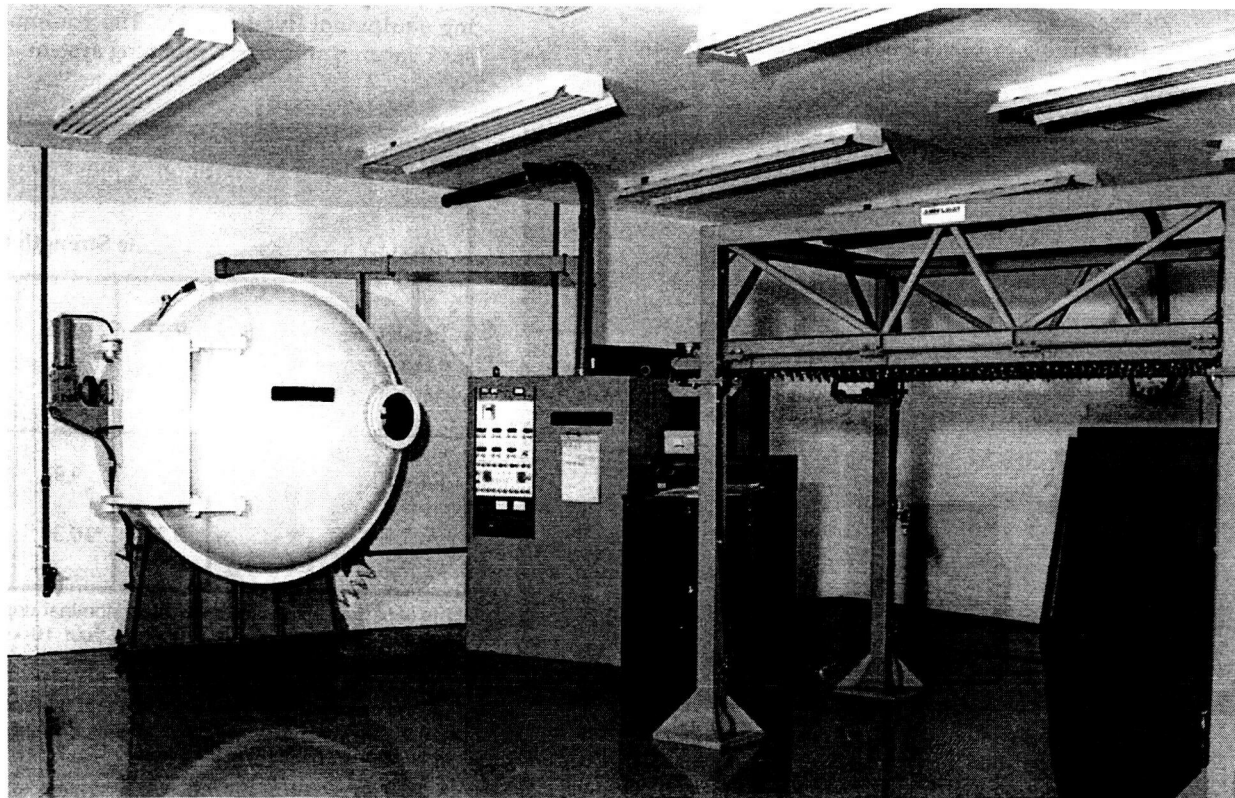
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SCHEMATIC OF AN ION VAPOR DEPOSITION SYSTEM



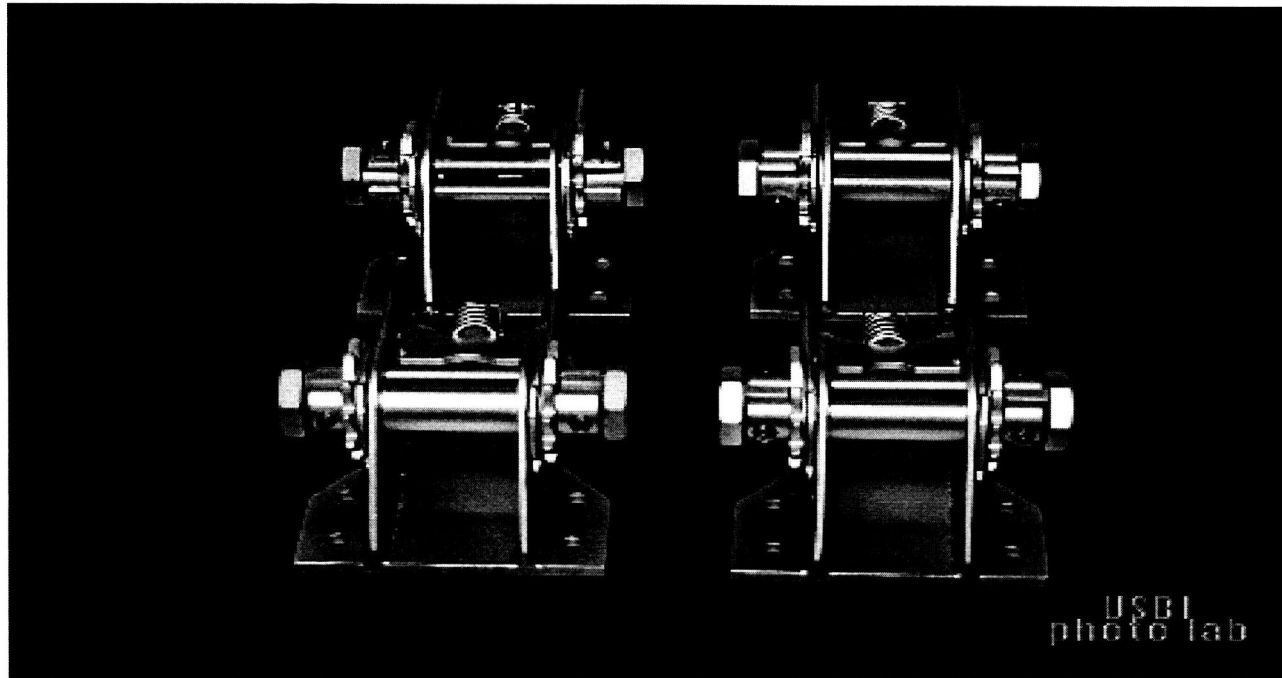
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PRODUCTION ION VAPOR DEPOSITION SYSTEM



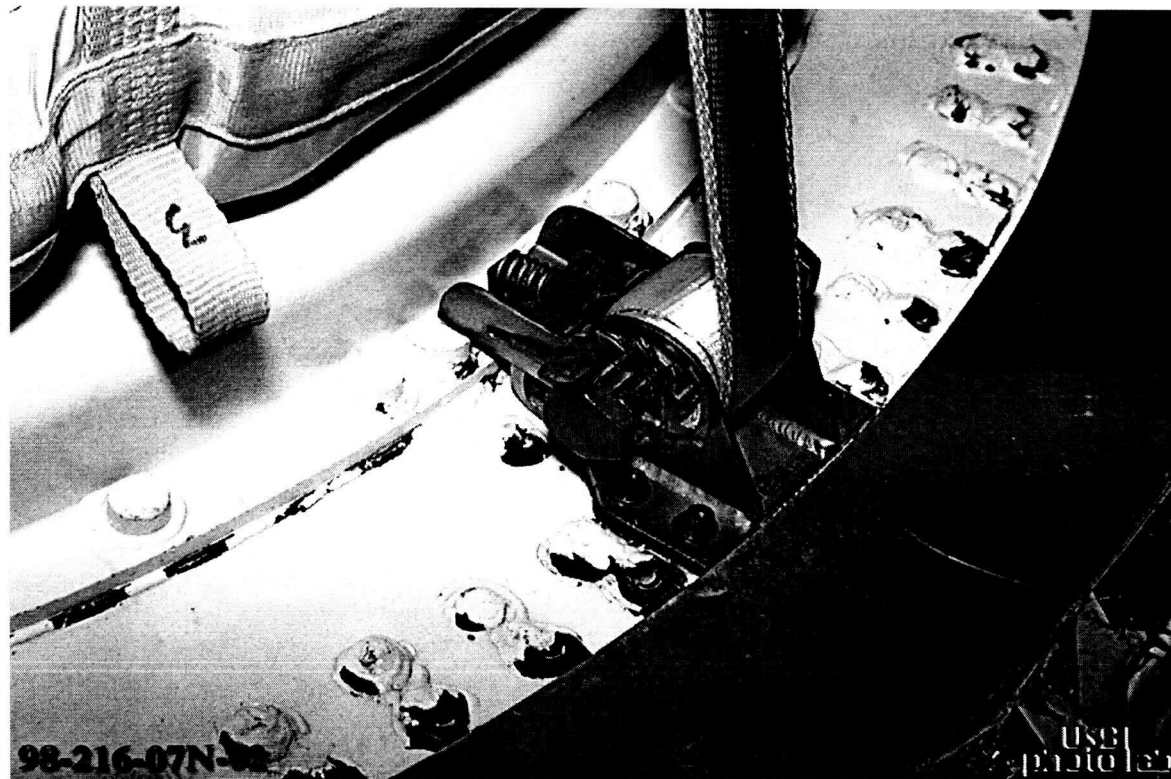
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IVD Coated Drogue Ratchets



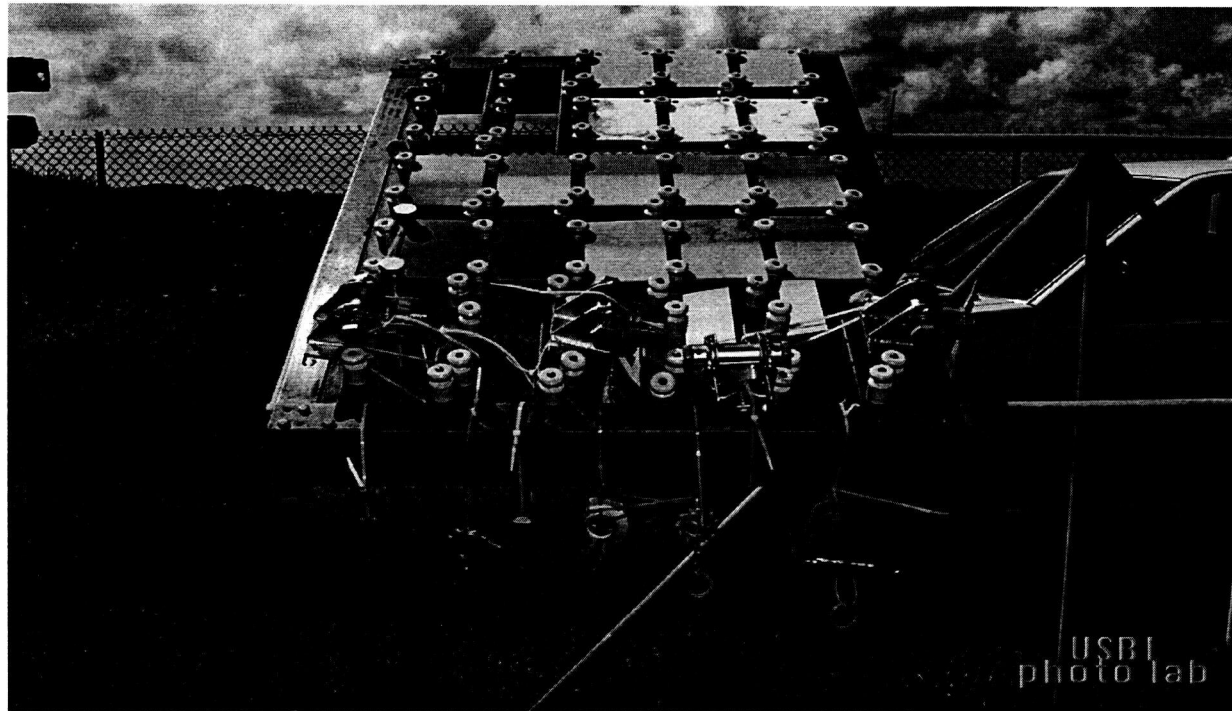
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Cadmium Coated Drogue Ratchet



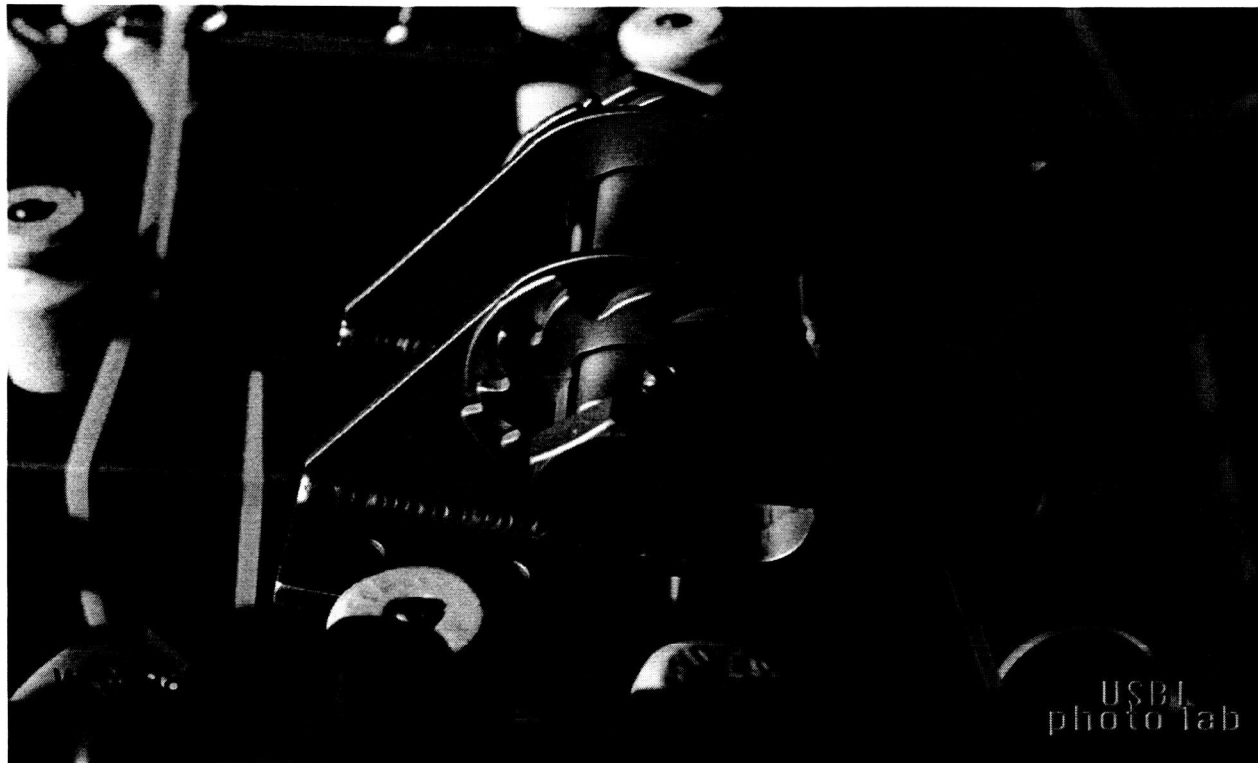
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KSC Beach Exposure Corrosion Test Site



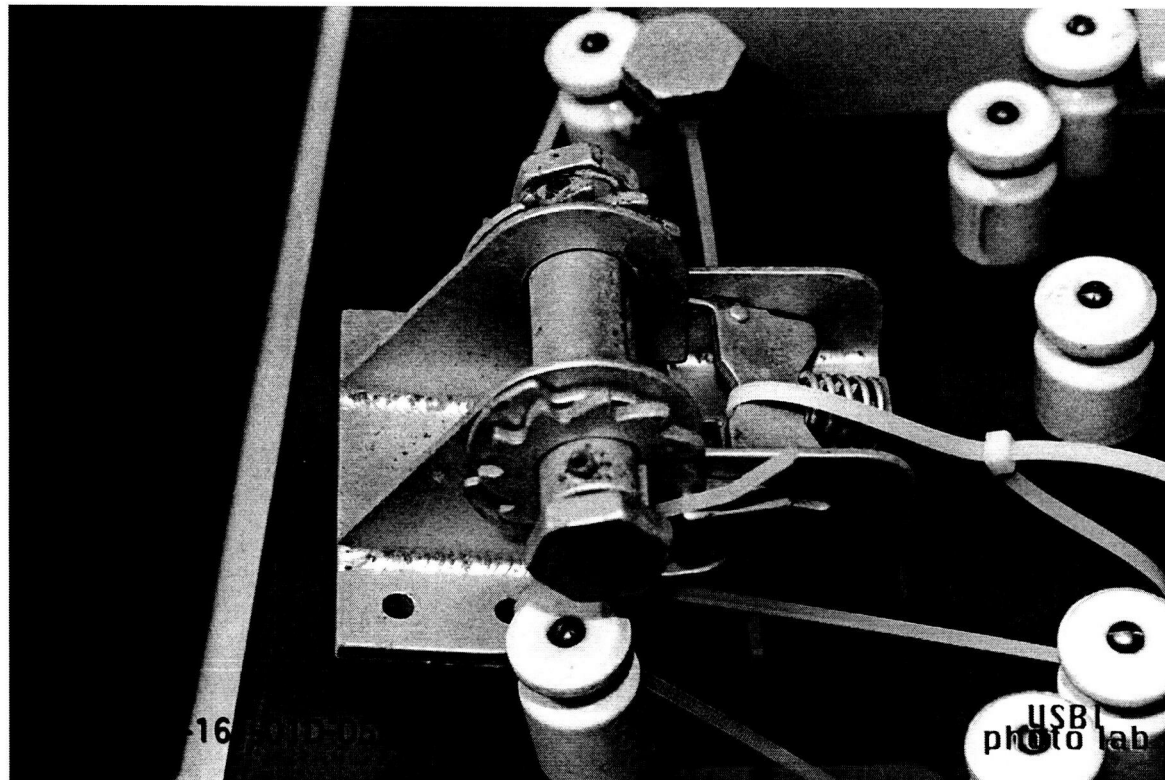
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KSC Beach Exposure IVD Ratchet Start



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KSC Beach Exposure After 8 Months



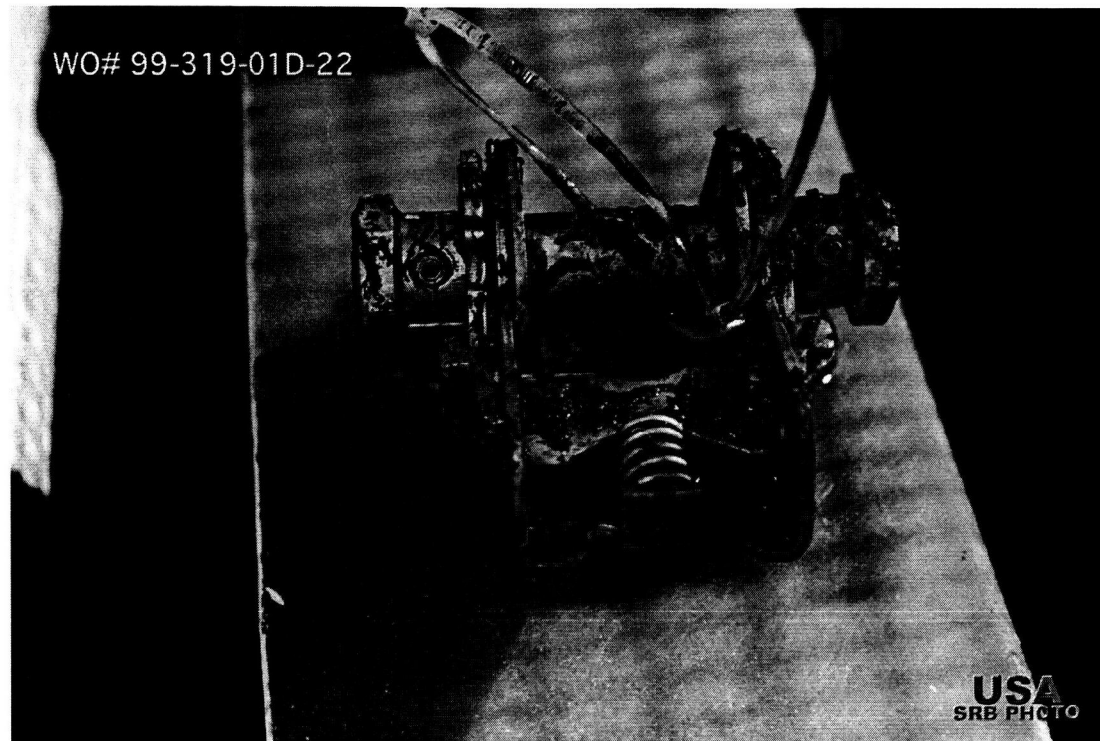
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KSC Seawater Immersion Facility



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Seawater After 5 Months Immersion



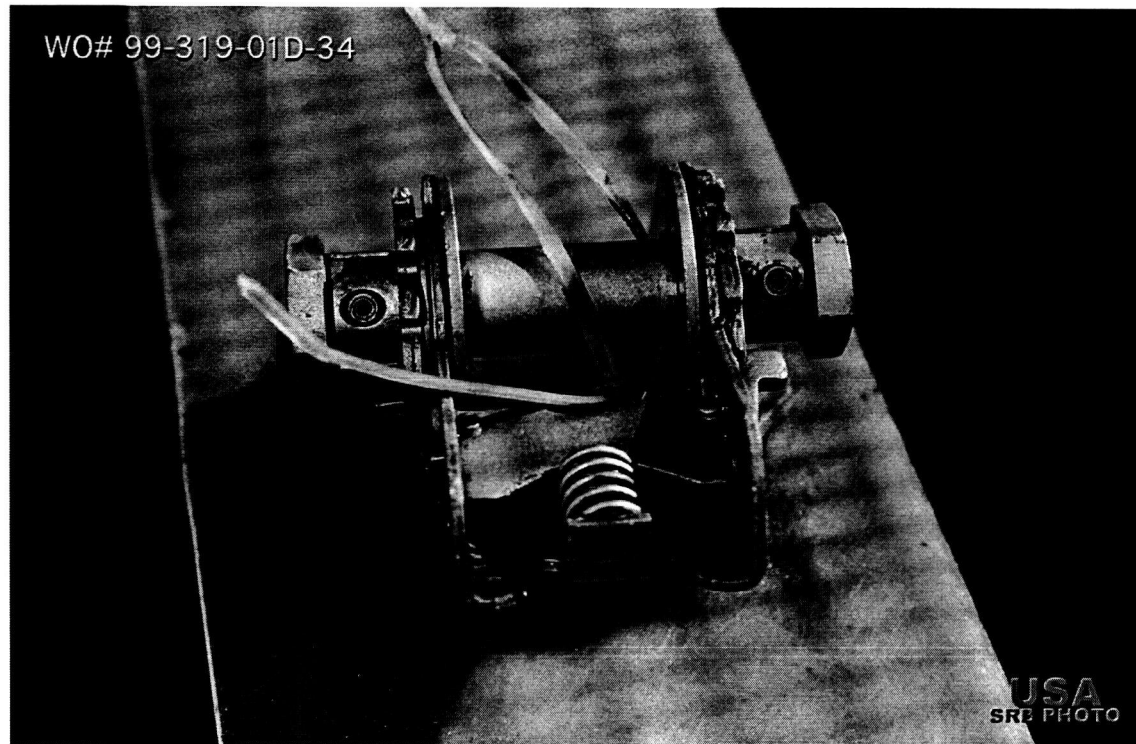
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Seawater After 5 Months Immersion



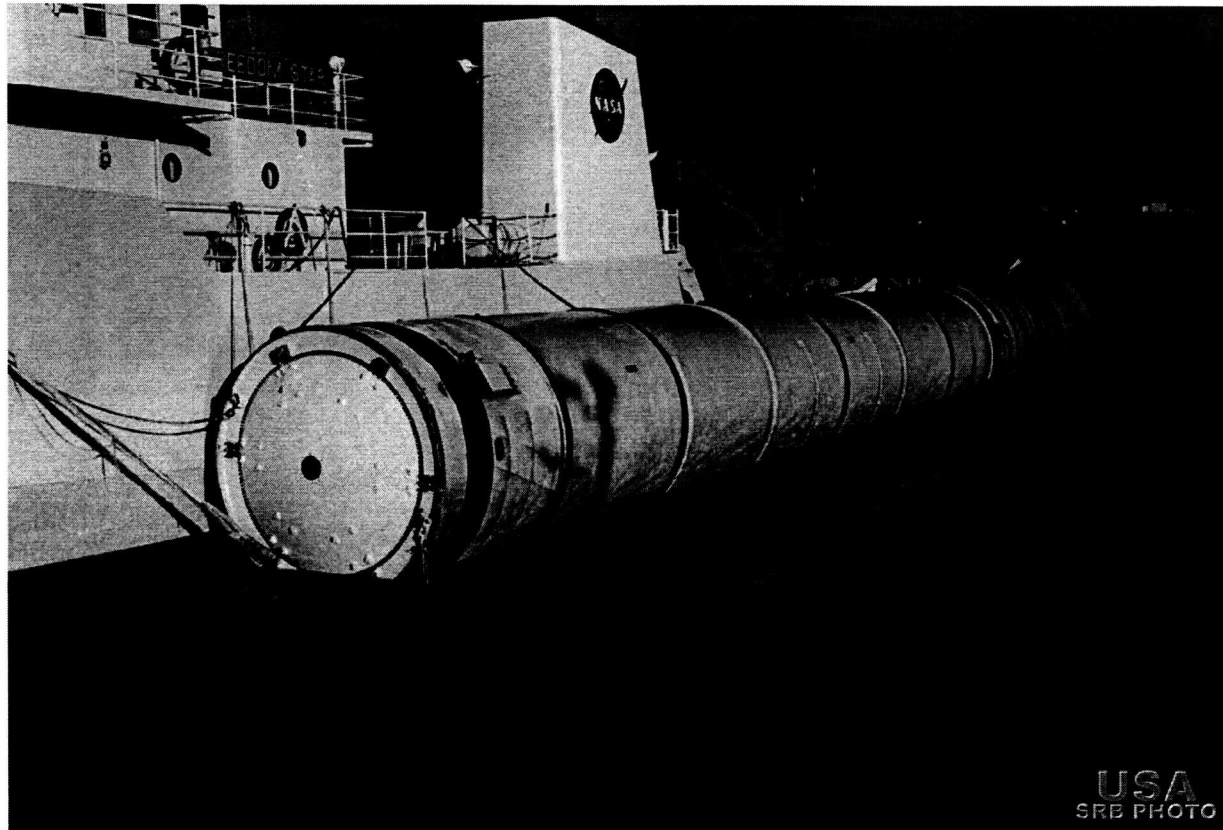
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Seawater 5 Months Immersion Cleaned



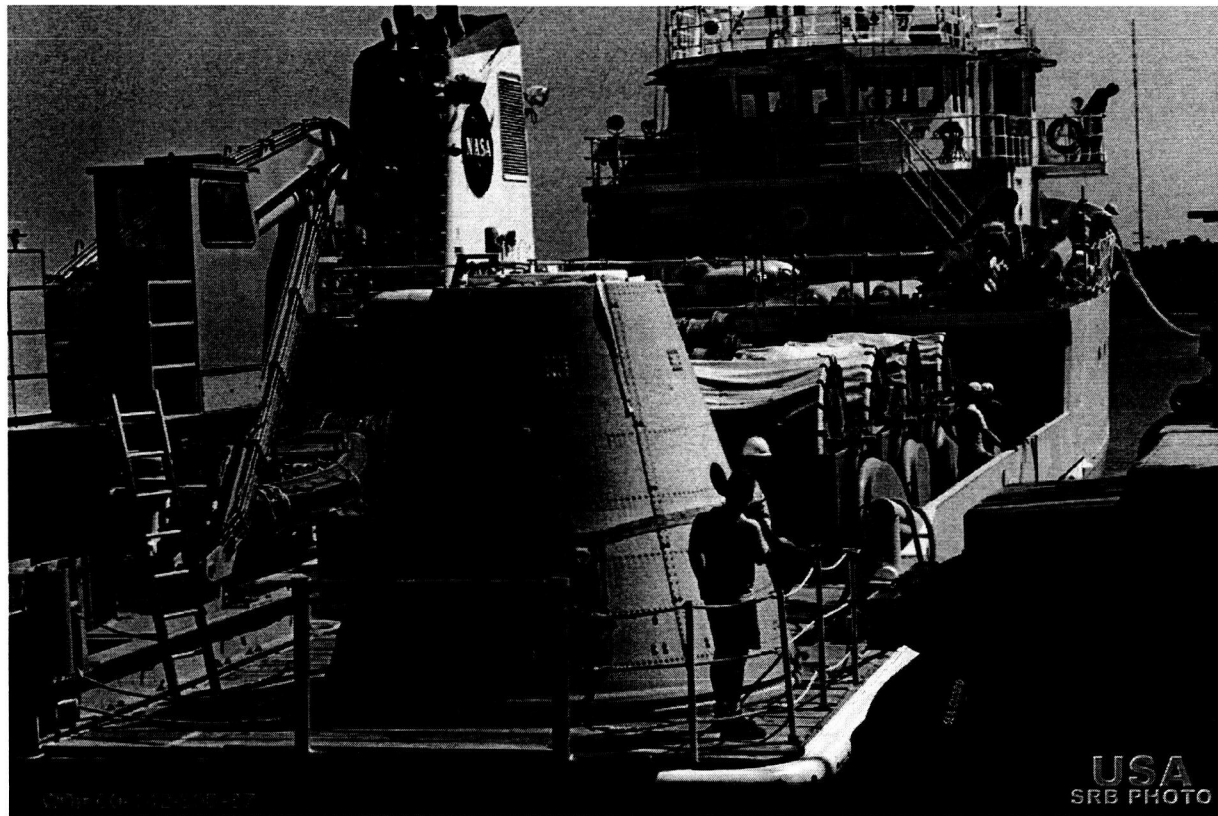
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Solid Rocket Booster Retrieval



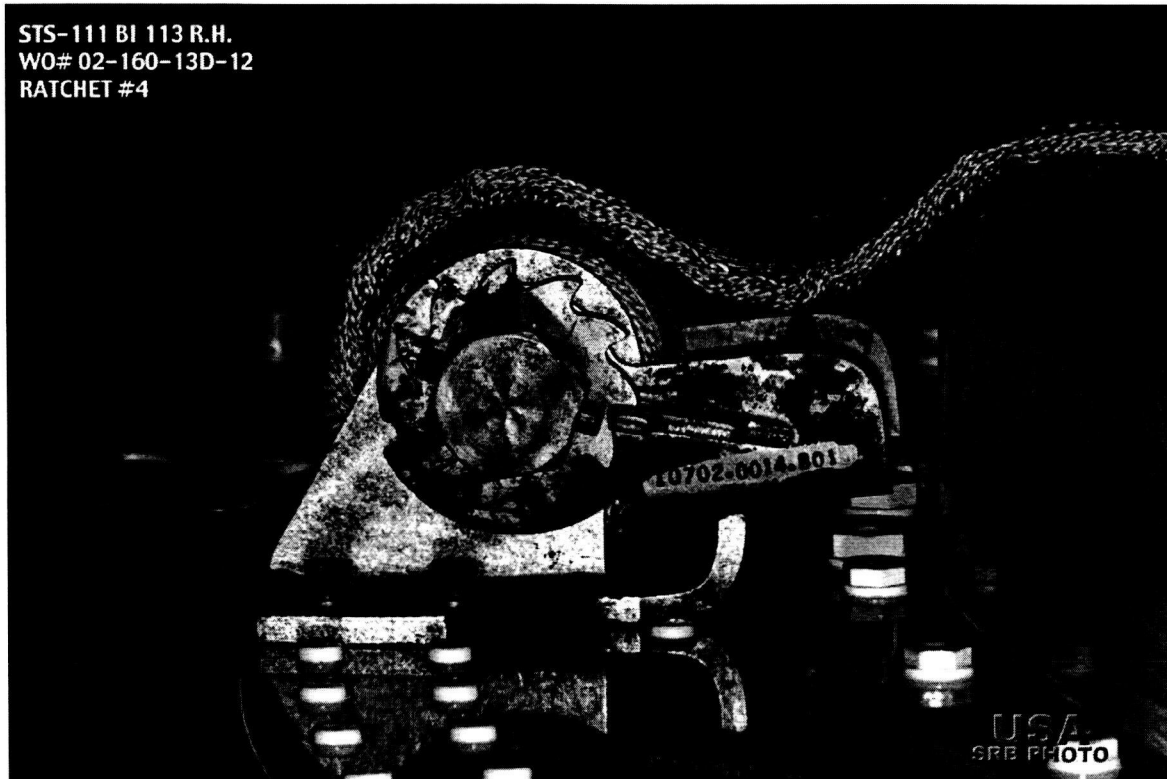
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Solid Rocket Booster Frustum Retrieval



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Cadmium Plated Ratchet After Retrieval



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- **Objectives**
- **Completed 48 Sets of IVD Coated Drogue Ratchets**
- **Continue Coating GSE Hardware with IVD**
- **USA M&P Proposal to IVD Other Flight Items**
- **Perform Cost / Benefit Analysis IVD Applications**
- **ECP for Approved on Selected Flight Items**

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- **Recommendations**
- **Continue Coating GSE Hardware with IVD**
- **Consider Use Of IVD For Other Flight Items**
 - **Including Application To TPS Hardware**
- **Promote “Wash-Dry-Fly” Concept**

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